☺(User)

```
                    ┌─────────────────────────────┐
Imported mode  ───► │          Editor             │ ◄─── Define interaction
                    │  ┌───────────────────────┐   │
                    │  │    BDT language       │   │
                    └──┴───────────┬───────────┴───┘
                                   │
                                   ▼
                    ┌─────────────────────────────┐
                    │          BDT File           │
                    │                             │
                    └──────────────┬──────────────┘
                                   │
                                   ▼
                    ┌─────────────────────────────┐
                    │     Transport/Storage       │
                    └──────────────┬──────────────┘
                                   │
                                   ▼
                    ┌─────────────────────────────┐
                    │      BDT Interpreter         │
                    │                              │
                    └──────────────┬──────────────┘
                                   │
                                   ▼
                    ┌─────────────────────────────┐
                    │       BDT Engine             │
                    │                              │
                    └──────────────┬──────────────┘
                                   │
                                   ▼
                    ┌─────────────────────────────┐
                    │  Presentation of 3D objects  │
                    │    and 3D environment        │
                    └──────────────────────────────┘
```

Figure 1

Section Number	Description
0	Null (Operation code: 0), or no action
1 (includes 1a & 1b)	Controls (Operation code: 1-100) Section (1a): Fundamental descriptions of Controls Section (1b): Flow Controls
2	Data Access (Operation code: 200-299)
3	Math Operations (Operation code: 400-499)
4	Transforms/Actions (Operation code: 500 and up)

Figure 2

Section Number	Command Name	Operation code	Argument 1	Argument 2	Argument 3	Argument 4	Description	
0	0	0	--				Example: 0 Meaning: Null, or no action	100
1a	Begin_Tigger	1	ID_Trigger				Example: Begin_Trigger(1) Meaning: Start trigger and Give it an ID	101
	End_Trigger	2	--				Example: End_Trigger Meaning: Stop Trigger	102
	Begin_Action	3	ID_Event	ID_Object			Example: Begin_Action(1,1) Meaning: Start Action, give it an ID and refer the Action to an Object	103
	End_Action	4	--				Example: End_Action Meaning: Stop Action	104

Fig. 3a Illustration of Section (0) and Partial Itemization of Section (1a) of the BDT Language.

Section (0): Null

Section (1a): Fundamental descriptions of Controls.

Section Number	Command Name	Operation code	Argument 1	Argument 2	Argument 3	Argument 4	Description
1b	For	10	Variable	Number of frames			Example: For(x,2) Meaning: Iterate to execute the action in the 'for' nest twice and offer the variable, x, for further use.
	End_For	11	—				Example: End_For Meaning: Stop For
	If	12	Variable	Constant			Example: If(x,1) Meaning: If x equals 1, then execute the following action.
	End_If	13					Example: End_If Meaning: Stop If
	If_Property	14	Property	Constant			Example: If_Property(property,1) Meaning: If variable equals 1, the certain notation of 3D property, then execute the following action.
	End_If_property	15					Example: End_If_Property Meaning: Stop If_Property
	If_Event ** See remark below.	20	Event				Example: If_Event(event) Meaning: If the event is true, then execute the following action.
	End_If_Event	21					Example: End_If_Event Meaning:: Stop If_Event
	Do	50	ID-Action				Example: Do 1 Meaning:: Execute the action 1.

105

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** Remark: Description of the values for the opcode 20.

Value of the opcode 20	Description
1	mouse_click
2	time
3	distance
4	proximity

Fig. 3b Illustration of Partial Itemization of Section (1b) of the BDT Language.
Section (1b): Flow Controls.

Section Number	Command Name	Operation code	Argument 1	Argument 2	Argument 3	Argument 4	Description	
2	Get	200	Variable				Example: Get(x, property) Meaning: Get the certain property of the object and put it in the variable x.	⟵ 120
3	Add	400	Variable	constant			Example: Add(X,3) Meaning: X=X+3	⟵ 130
	Substract	401	Variable	constant			Example: Subtract(X,3) Meaning: X=X-3	
	Multiply	402	Variable	constant			Example: Multiply(X,3) Meaning: X=X*3	⟵ 131
	Divide	403	Variable	constant			Example: Divide(X,3) Meaning: X=X/3	
4	Rotate	1001	X coordinate	Y coordinate	Z coordinate	Angle	Example: Rotate(x,y,z,theta) Meaning: Rotate the object in the theta degree around the normal vector (x,y,z)	⟵ 140
	Move_Vector	1010	X coordiante	Y coordinate	Z coordinate		Example: Move_Vector(x,y,z) Meaning: Move the object from original position to the (x,y,z).	⟵ 141

Fig. 4 Illustration of Partial Itemization of Section (2), Partial Itemization of Section (3) and Partial Itemization of Section (4) of the BDT Language.

Section (2): Data access.

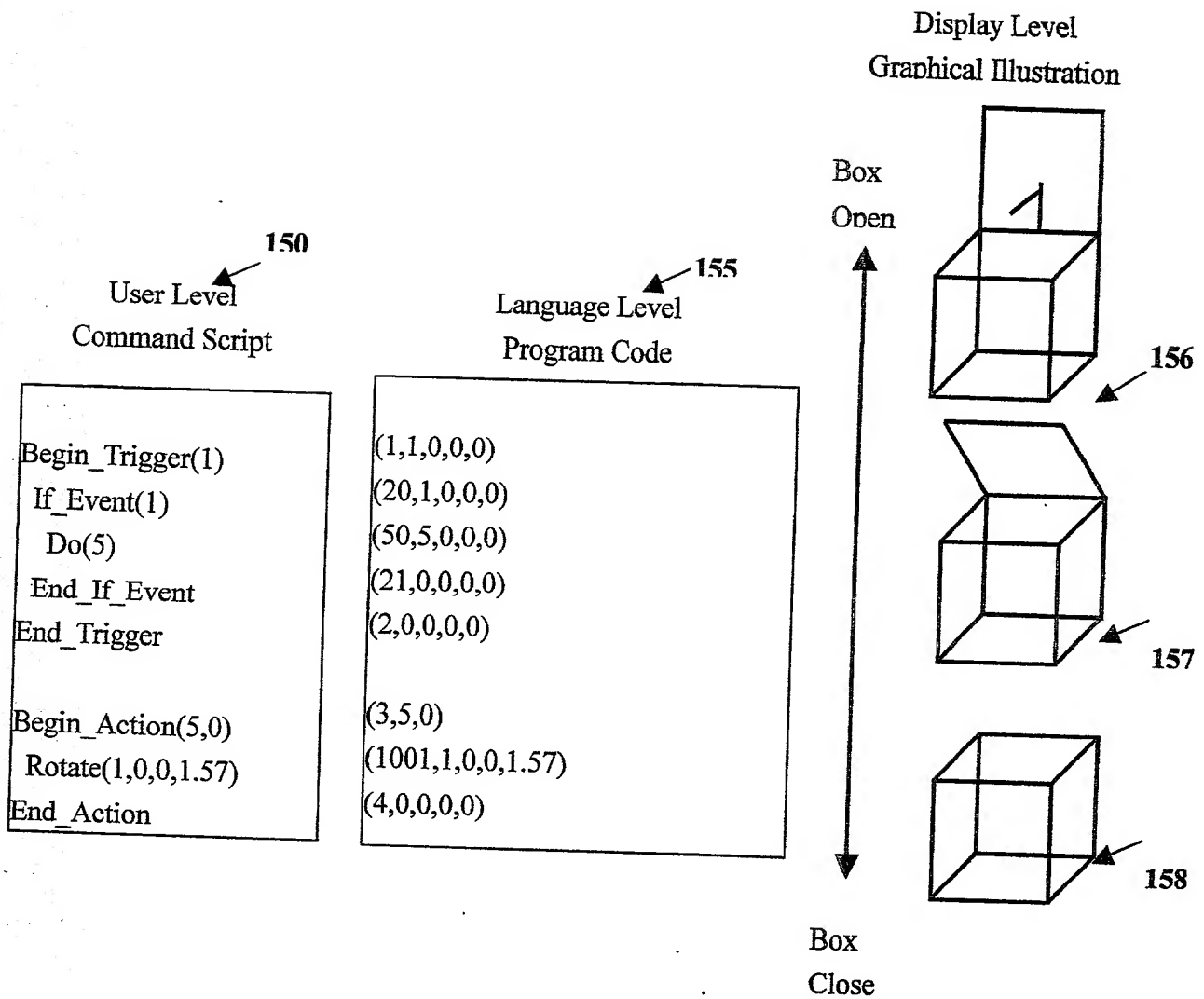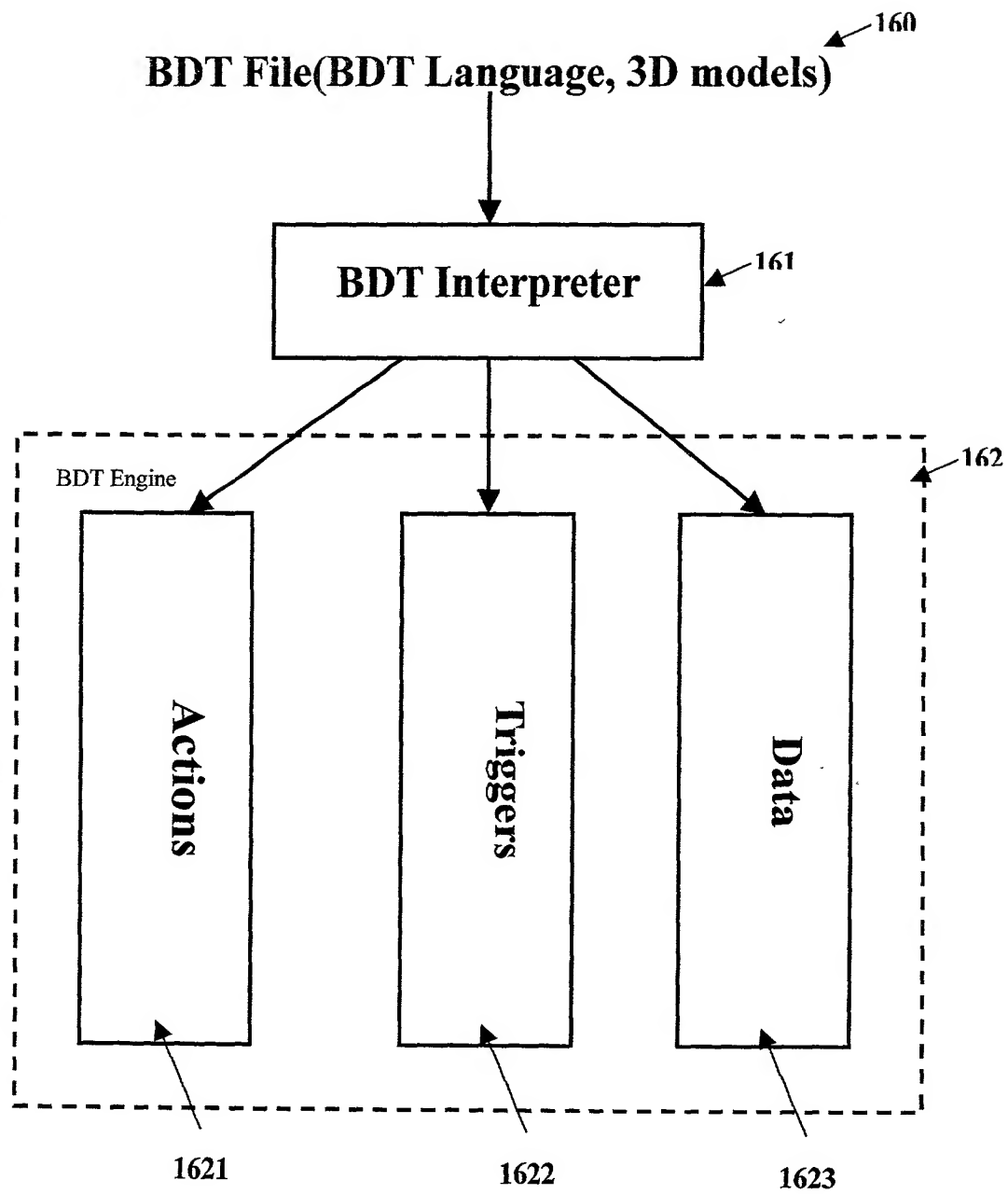Section (3): Math operations.

Section (4): Transforms/Actions.

Display Level
Graphical Illustration

150

User Level
Command Script

155

Language Level
Program Code

Box
Open

```
Begin_Trigger(1)
  If_Event(1)
    Do(5)
  End_If_Event
End_Trigger

Begin_Action(5,0)
  Rotate(1,0,0,1.57)
End_Action
```

```
(1,1,0,0,0)
(20,1,0,0,0)
(50,5,0,0,0)
(21,0,0,0,0)
(2,0,0,0,0)

(3,5,0)
(1001,1,0,0,1.57)
(4,0,0,0,0)
```

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158

Box
Close

Figure 5

Figure 6